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Yields of the Field Experiments 1978

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78/R/CS/198 Nitrification Inhibitors - Barley

Rothamsted Research

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78/R/CS/198

NITRIFICATION INHIBITORS

Object: To study the residual effects on barley of nitrogen fertiliser treatments applied to forage maize in 1977 - Long Hoos VI/VII 5.

Sponsors: J. Ashworth, A.J. Barnard.

The second year, barley.

For previous year see 77/R/CS/198

Design: 3 randomised blocks of 10 plots split into 2.

Whole plot dimensions: 4.27 x 9.14.

Treatments: All combinations of:-

Whole plots

1. N TREAT(77) Nitrogen forms and rates, and nitrification inhibitors applied in 1977:

Aqueous urea/ammonium nitrate injected to seedbed (May) at 120 kg N:-

AQ3 -	Alone
AQ3 STC1	With sodium trithiocarbonate at 10 kg
AQ3 STC2	With sodium trithiocarbonate at 25 kg
AQ3 NIT1	With nitrapyrin ('N-Serve') at 0.5 kg
AQ3 NIT2	With nitrapyrin at 1.0 kg

'Nitro-Chalk' applied to seedbed (May) (kg N):-

NC1	40
NC2	80
NC3	120
NC4	160

'Nitro-Chalk' dressing divided (kg N):-

NC1+1+1 40 to seedbed (May), 40 in July, 40 at tasselling in August

Sub plots

2. N 78 Nitrogen fertiliser, as 'Nitro-Chalk 25', applied to seedbed in 1978 (kg N):

0
50

Basal applications: Manures: (0:14:28) at 750 kg. Chalk at 2.9 t. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 l in 220 l). Fungicide: Tridemorph at 0.53 kg in 220 l.

Seed: Porthos, sown at 160 kg.

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Cultivations, etc.:— Cleared maize, PK applied: 10 Jan, 1978. Chalk applied: 8 Feb. Ploughed: 27 Feb. Power harrowed, rotary harrowed, seed sown: 6 Apr. N applied: 8 May. Weedkiller applied: 26 May. Combine harvested: 31 Aug-4 Sept.

NOTE: N percentages of grain were determined.

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

N TREAT(77)	N 78	0	50	MEAN
AQ3 -		2.81	5.01	3.91
AQ3 STC1		2.98	5.45	4.22
AQ3 STC2		3.46	5.17	4.31
AQ3 NIT1		2.93	5.03	3.98
AQ3 NIT2		3.01	5.02	4.02
NC1		2.58	4.91	3.74
NC2		3.12	5.04	4.08
NC3		3.43	5.58	4.51
NC4		4.40	6.18	5.29
NC 1+1+1		3.70	5.68	4.69
MEAN		3.24	5.31	4.27

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N TREAT(77)	N 78	N TREAT(77)	N 78
SED	0.273	0.092	0.342	
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
	N TREAT(77)		0.292	

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	18	0.334	7.8
BLOCK.WP.SP	20	0.357	8.4

GRAIN MEAN DM% 77.6

SUB PLOT AREA HARVESTED 0.00059